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7. (Amended) A torch for heating a member attendant a metal bonding operation, comprising:

a torch head having an oxygen passageway and a fuel gas passageway formed therein, each passageway having an inlet,

a torch handle connected to the torch head and having a fluid conduit for each passageway in fluid communication with the respective inlet,

oxygen control means mountable on the torch head to extend into the oxygen passageway for selectively blocking the flow therethrough and adjustably controlling the rate of flow therethrough,


fuel gas control means mountable on the torch head to extend into the fuel gas passageway for selectively blocking the flow therethrough and adjustably controlling the rate of flow therethrough,

a torch tip, and

means for attaching the torch tip to the torch head and cooperating with the torch head to place the torch tip in fluid communication with said fuel gas and oxygen passageways,

said torch tip including a tip stem having an inlet end in fluid communication with said fuel gas and oxygen

passageways, [and] an outlet end, and a tip/head joined to the tip outlet end in fluid communication with the tip outlet end and having a substantially arcuate configuration extending angularly about an axis through an angle of at least about 240°,

 said tip head comprising a substantially planar member defining a first plane located at a first predetermined axial position along said axis and having a single array of flame outlet orifices, defined within sidewall portions of said tip head and disposed within said first plane of said tip head, comprising at least [a] first, [a] second, and [a] third flame outlet orifices, [the] said flame outlet orifices being angularly spaced from one another in a substantially circumferential manner throughout said substantially arcuate configuration of said tip head and being angularly oriented with respect to said first plane of said tip head, so as to open[ing] toward a [common point] single axial position which is disposed within a second plane which is disposed parallel to said first plane of said tip head and which is located at a second predetermined axial position along said axis of said tip head which is axially offset from said first predetermined axial position of said first plane of said tip head and within which said flame outlet

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~~orifices are disposed, and to thereby project flames out-
wardly therefrom at a predetermined angle with respect to
said first plane of said tip head so as to thereby achieve
heating of the member, within and along said second plane,
attendant a metal bonding operation to be achieved along
said second plane.~~

Please rewrite Claim 6 as follows:

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~~6. (Amended) The torch of Claim 5, wherein:
each one of [the] said orifices is of substantial-
ly equal linear spacing from said [point] axis of said tip
head and [the] said tip head extends arcuately through an
angle of less than about 280°.~~

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Q2

~~Please rewrite Claim 7 as follows:~~

~~7. (Amended) The torch of Claim 6, wherein:
said [the] tip head has an angularly inner pe-
ripheral surface having [the] said orifices opening there-
through, and an angularly outer peripheral surface more re-~~

B2
mote from said [point] axis of said tip head than [the] said
angularly inner peripheral surface, [the] and said tip stem
is joined to [an] said angularly outer peripheral surface
and has a central axis of elongation that [extends through]
intersects said [point] axis of said tip head.


Please rewrite Claim 9 as follows:

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9. (Amended) A torch tip adapted for use with a fuel gas
torch to heat or solder a metal structure such as tubular
members, comprising:


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an elongated tip stem having an inlet end and an
outlet end and an elongated tubular head arcuately curved
about a common point and spaced therefrom, said tip head be-
ing of an arcuate length to extend angularly about an axis
through an angle of at least about 245° relative to said
point and having first and second closed ends and a fluid
passageway extending between the closed ends, said tip head
having an angularly inner peripheral surface and an angular-
ly outer peripheral surface more remotely spaced from said
point along its length than the angularly inner peripheral
surface, [said inner peripheral surface having several out-

let orifice opening therethrough toward said common point and to the tip head passageway and being substantially equally angularly spaced from one another,] the tip stem having a passageway extending from the stem inlet and opening to the tip head passageway.


said tip head further comprising a substantially planar member defining a first plane located at a first predetermined axial position along said axis and having a single array of flame outlet orifices, defined within sidewall portions of said inner peripheral surface of said tip head and disposed within said first plane of said tip head, comprising at least first, second, and third flame outlet orifices, said flame outlet orifices being angularly spaced from one another in a substantially circumferential manner throughout said substantially arcuate configuration of said tip head and being angularly oriented with respect to said first plane of said tip head, so as to open toward a single axial position which is disposed within a second plane which is disposed parallel to said first plane of said tip head and which is located at a second predetermined axial position along said axis of said tip head which is axially offset from said first predetermined axial position of said first plane of said tip head and within which said flame


outlet orifices are disposed, and to thereby project flames
outwardly therefrom at a predetermined angle with respect to
said first plane of said tip head so as to thereby achieve
heating of the member, within and along said second plane,
attendant a metal bonding operation to be achieved along
said second plane.

Please rewrite Claim 11 as follows:


11. (Amended) The torch tip of Claim 10, wherein:
said [the] tip stem has a central axis of elon-
gation that [extends through] intersects said [point] axis
of said tip head and extends [angularly] away from said
[point] axis of said tip head about midway between [the]
said first and third orifices.

Please rewrite Claim 13 as follows:


13. (Amended) A torch for heating a member attendant a metal
bonding operation, comprising:
a torch head having a fuel gas passageway provided

therein;

a torch handle connected to said torch head and having a fuel gas conduit provided therein and connected to said fuel gas passageway of said torch head for providing fuel gas to said fuel gas passageway;

fuel gas control means mounted upon said torch head and operatively associated with said fuel gas passageway provided within said torch head for selectively controlling the rate of flow of said fuel gas through said fuel gas passageway provided within said torch head;

a torch tip; and

means for mounting said torch tip upon said torch head such that said torch tip is disposed in fluidic communication with said fuel gas passageway of said torch head;

said torch tip comprising a tip head having a substantially arcuate configuration, extending angularly about an axis through an angular extent of at least substantially 240°.

said tip head comprising a substantially planar member defining a first plane located at a first predetermined axial position along said axis and having a single array of flame outlet orifices, defined within sidewall portions of said tip head and disposed within said first plane

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8

of said tip head, comprising at least first, second, and third flame outlet orifices, said flame outlet orifices being equiangularly spaced from one another in a substantially circumferential manner throughout said substantially arcuate configuration of said tip head and being angularly oriented with respect to said first plane of said tip head, so as to open toward a single axial position which is disposed within a second plane which is disposed parallel to said first plane of said tip head and which is located at a second predetermined axial position along said axis of said tip head which is axially offset from said first predetermined axial position of said first plane of said tip head and within which said flame outlet orifices are disposed, and to thereby project flames outwardly therefrom at a predetermined angle with respect to said first plane of said tip head so as to thereby achieve heating of the member, within and along said second plane, attendant a metal bonding operation to be achieved along said second plane.

Please rewrite Claim 16 as follows:

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16. (Amended) A torch for heating a member attendant a metal

bonding operation, comprising:

a torch head having an air passageway and a fuel gas passageway formed therein, each passageway having an inlet.

a torch handle connected to said torch head and having a fluid conduit for each passageway in fluid communication with the respective inlet.

air control means mounted upon said torch head and operatively associated with said air passageway provided within said torch head for selectively blocking the flow therethrough and adjustably controlling the rate of flow therethrough.

fuel gas control means mounted upon said torch head and operatively associated with said fuel gas passageway provided within said torch head for selectively blocking the flow therethrough and adjustably controlling the rate of flow therethrough.

a torch tip, and
means for attaching said torch tip to said torch head and cooperating with said torch head so as to place said torch tip in fluid communication with said fuel gas and air passageways.

said torch tip including a tip stem having an in-

let end in fluid communication with said fuel gas and air passageways, an outlet end, and a tip head joined to said tip outlet end in fluid communication with said tip outlet end and having a substantially arcuate configuration extending angularly about an axis through an angle of at least about 240°.

said tip head comprising a substantially planar member defining a first plane located at a first predetermined axial position along said axis and having a single array of flame outlet orifices, defined within sidewall portions of said tip head and disposed within said first plane of said tip head, comprising at least first, second, and third flame outlet orifices, said flame outlet orifices being angularly spaced from one another in a substantially circumferential manner throughout said substantially arcuate configuration of said tip head and being angularly oriented with respect to said first plane of said tip head, so as to open toward a single axial position which is disposed within a second plane which is disposed parallel to said first plane of said tip head and which is located at a second predetermined axial position along said axis of said tip head which is axially offset from said first predetermined axial position of said first plane of said tip head and within

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which said flame outlet orifices are disposed, and to thereby project flames outwardly therefrom at a predetermined angle with respect to said first plane of said tip head so as to thereby achieve heating of the member, within and along said second plane, attendant a metal bonding operation to be achieved along said second plane.

Please rewrite Claim 18 as follows:

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18. (Amended) The torch as set forth in claim 16, wherein:
said at least first, second, and third flame outlet orifices are substantially equiangularly spaced from each other through an angle of approximately 120°.

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☒ Please rewrite Claim 19 as follows:]

19. (Amended) The torch as set forth in Claim 16, wherein:
said at least three flame outlet orifices of said tip head comprise a first outlet orifice disposed adjacent to a first end of said tip head, a second orifice disposed adjacent to a second end of said tip head, and a third ori-

fice interposed substantially midway between said first and second orifices.

✓ Please rewrite Claim 20 as follows: ✓

20. (Amended) A torch tip for use with a fuel gas torch for heating tubular members, comprising:

a tip stem having a first end for connection to a torch head of a fuel gas torch; and

a tip head connected to a second end of said tip stem.

said tip head comprising a substantially arcuate tubular member, extending through an angular extent of at least substantially 240° about an axis and radially spaced therefrom, and comprising a substantially planar member defining a first plane located at a first predetermined axial position along said axis and having a single array of flame outlet orifices, defined within sidewall portions of said inner peripheral surface of said tip head and disposed within said first plane of said tip head, comprising at least first, second, and third flame outlet orifices, said flame outlet orifices being equiangularly spaced from one another

in a substantially circumferential manner throughout said at least 240° of said substantially arcuate configuration of said tip head and being angularly oriented with respect to said first plane of said tip head, so as to open toward a single axial position which is disposed within a second plane which is disposed parallel to said first plane of said tip head and which is located at a second predetermined axial position along said axis of said tip head which is axially offset from said first predetermined axial position of said first plane of said tip head and within which said flame outlet orifices are disposed, and to thereby project flames outwardly therefrom at a predetermined angle with respect to said first plane of said tip head so as to thereby achieve heating of the member, within and along said second plane, attendant a metal bonding operation to be achieved along said second plane.

Please rewrite Claim 23 as follows:

23. (Amended) The torch tip as set forth in Claim 21, wherein:

said tip stem is joined to said angularly outer

18
peripheral surface and has a central axis of elongation that intersects said axis of said tip head.

In Claim ~~24~~, line 1, change "23" to --20--.

Please rewrite Claim 25 as follows:

25. (Amended) The torch tip as set forth in Claim 22, where-
in:

19
said tip stem is joined to said tip head approxi-
mately midway between said first and third orifices.

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Please rewrite Claim 26 as follows:

26. (Amended) The torch tip as set forth in Claim 9, where-
in:

said predetermined angle at which said flames are
projected outwardly from said at least three flame outlet
orifices, toward said axis of said tip head, and with re-